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54 Tannin-containing composition.

57 A beautifying composition comprising an effective amount of tannin(s) and a beautifying carrier such as a food or a drink, for example, coffee, chocolate, tea, gum, candy, sweets, cookie, cereal, wine, liquor, fruit juice, carbonated beverage and jam, or a cosmetic, especially a cosmetic material containing a vitamin(s).

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## TANNIN-CONTAINING COMPOSITION

This invention relates to a beautifying composition containing tannin which is available as a food or a cosmetic having a high beautifying effect.

It has been a dearest wish of every woman to have a beautiful and white skin. Thus foods and cosmetics containing a beautifying agent have attracted great attention of consumers.

Although some of conventional foods of the aforesaid type contain ascorbic acid, this acid is unstable and liable to undergo decomposition or denaturation when exposed to, for example, heat, light, enzymes, metal ions or pH change, which makes it unsatisfactory.

Further, there are some drugs which aim at making the skin white and beautiful and treating pigmentation such as spots and freckles, for example, external skin preparations comprising SH compounds such as cysteine or glutathione, vitamin C, colloidal sulfur or hydroquinone. However these preparations have some disadvantages such that those comprising ascorbic acid are poor in stability; that those comprising colloidal sulfur cannot achieve a satisfactory beautifying effect; and that those comprising hydroquinone show some side effects, thus making all of them unsatisfactory.

The present inventors have found out that the intake of tannin as a food in an encapsulated or wafer-wrapped form, the administration of tannin as an ingredient of a nourishing or tonic agent or the use of a cosmetic containing tannin have a beautifying effect, thus achieving the present invention.

The invention provides a beautifying composition comprising an effective amount of tannin(s) and a beautifying carrier such as a food and a drink, for example, coffee, chocolate, tea, gum, candy, sweets, cookie, cereal, wine, liquor, fruit juice, carbonated beverage and jam, and then a cosmetic, especially a cosmetic material containing a vitamin(s).

The invention further provides a method for beautifying the skin of human being by administering tannin with a drink or a food and then a method for beautifying the skin of human being by applying tannin on the skin with a cosmetic.

The invention includes tannin added to a prior beautifying agent such vitamin C tablets or capsules.

The cosmetic to use in the invention may further include vitamins such as beta-carotin, vitamin C, a derivative from vitamin C, vitamin E, a derivative from vitamin E and vitamin A acid (retinoic acid); saccharide alcohol such as glycerin, xylitol and sorbitol; peptide such as casein peptide, collagen peptide and keratin peptide; or others for example including chitin, chitosan, elastin, hyaluronic acid, squalene, sodium chondroitin sulfate, nucleic acid, DNA, kojic acid (5-hydroxy-2-hydroxymethyl-gamma-pyrone), glycyrrhizin, lethicin, sitosterol or glutathione.

Accordingly, a tannin-containing composition of the present invention is characterized by exerting a beautifying effect when taken in an amount of approximately 250 mg per day as a beautifying food in an encapsulated or wafer-wrapped form repeatedly for several months.

Another tannin-containing composition of the present invention is characterized by exerting a beautifying effect when added to, for example, a cosmetic which is to be repeatedly applied to the skin suffering from spots, freckles or dark skin.

The term "beautifying effect" as used herein means an effect whereby spots and freckles are removed and the skin is made beautiful, white and glossy.

In the present invention, tannin means an astringent substance commonly contained in, for example, root, stem, leaf, cortex and fruit of plants.

Typical examples of the tannin include persimmon tannin, chinese nutgall tannin, nutgall tannin, tea-leaf tannin, wattle tannin, quebracho tannin, dividivi tannin, myrobalan tannin and sumac tannin. Now each tannin will be briefly described.

#### Persimmon tannin:

Tannin contained in green astringent persimmons. A persimmon tannin extract is obtained by grinding green astringent persimmons, hermetically sealing the ground matter together with water and filtering it after several days. The obtained supernatant or a solution obtained by adding water to the cake followed by pressing affords a tannin extract. In general, the extract is stored in a hermetically sealed state for approximately 6 months prior to the use. A persimmon tannin powder is obtained by powdering the aforesaid persimmon tannin extract by, for example, spray drying, vacuum drying or lyophilizing.

#### Chinese nutgall tannin:

Tannin contained in a gall formed on a leaf of *Rhus javanica* (Anacardiaceae) by the sting of *Kaburagia rhusiocola* TAKAGI. A dry gall contains 50 to 70 % by weight of chinese nutgall tannin. It is available as a material for the formulation of, for example, astringent, remedy for hematemesis or remedy for catarrh.

5 Nutgall tannin:

Tannin contained in a gall formed on a young branch of a fagaceous tree by the stimulation caused by the oviposition of *Cynips gallaetinctoria* OLIV. A dry gall contains approximately 70 % by weight of nutgall tannin. It is one of crude drugs and available for nearly the same purposes as those described in the case  
10 of chinese nutgall tannin.

Tea-leaf tannin:

Tannin contained in a large amount in tea leaves. Dried fresh tea leaves contain 15 to 25 % by weight  
15 of tea-leaf tannin, though the content varies depending on the species of tea and the harvest time.

Wattle tannin:

Tannin contained in the cortex of various plants belonging to the genus *Acacia*. A dry cortex contains  
20 approximately 30 % by weight of wattle tannin.

Quebracho tannin:

Tannin extracted from the duramen of quebracho belonging to the family *Rhus*. A duramen contains  
25 approximately 20 % by weight of quebracho tannin.

Dividivi tannin:

Tannin contained in dividivi which is a leguminous tall tree. A dry dividivi fruit contains approximately 50  
30 % by weight of dividivi tannin.

Myrobalan tannin:

Tannin contained in the fruit of a plant belonging to the family *Combretaceae*. A dry myrobalan fruit  
35 contains approximately 20 to 40 % by weight of myrobalan tannin while the sarcocarp contains 40 to 50 % by weight of the same.

Sumac tannin:

40 Tannin contained in the leaf of sumac or other plants belonging to the family of *Rhus*. Dry fresh leaves contain 13 to 26 % by weight of sumac tannin.

Each of these tannins may be obtained in the form of a tannin extract by extracting with water. Further, the obtained tannin extract may be powdered by, for example, spray drying vacuum drying or lyophilizing to thereby give a tannin powder.

45 The tannins as cited above are merely given by way of example and it is needless to say that the present invention is not restricted thereby.

When the tannin-containing composition of the present invention is to be taken as a food in, for example, an encapsulated form, it may contain, in addition to the above-mentioned tannin extract or tannin powder, monosaccharides such as lactose, starch, wheat flour, proteins and peptide and dietary fibers such  
50 as cellulose and polydextrose. Further, tannin may be added to other nourishing drugs such as vitamin preparations or tonics.

In summary, the composition of the present invention is one containing any of the aforementioned tannins and may be formulated into capsule, tablet, granules, biscuit, drink, nourishing foods, and refreshing  
55 drink as well as cream, cosmetic lotion, pack, milky lotion, soap and detergent, each of which may be produced in a conventional manner.

The content of tannin in the tannin-containing composition of the present invention may range from 0.01 to 20 % by weight, preferably from 0.1 to 10 % by weight. It may be determined depending on the dose of the food or cosmetic. In a standard case, tannin may be taken in a dose of 250 mg per day, which roughly

corresponds to the amount of tannin contained in an astringent persimmon. The method for the addition of tannin may be appropriately selected depending on the production process or the form of each food or cosmetic product.

The detailed mechanism of the achievement of the beautifying effect of the tannin composition of the present invention is unelucidated as yet. It is assumed, however, that tannin would inhibit the activity of a pigment-forming enzyme such as tyrosinase and stimulate skin cells to thereby promote the decomposition of melanin pigment which has been formed, thus exerting an effect of preventing pigmentation and beautifying the skin, since spots and freckles are formed when tyrosine is converted into melanin by tyrosinase followed by pigmentation.

As described above in detail, the tannin-containing composition of the present invention is effective as a beautifying food or cosmetic. Thus this composition can satisfy the requirement of not only female but also male consumers in the treatment of spots, freckles and dark skin.

#### [Examples]

To further illustrate the present invention, and not by way of limitation, the following Examples will be given, wherein all parts are by weight.

#### Example 1: Capsule

Persimmon tannin was given 25 female subjects (aged from 25 to 50) suffering from spots, freckles or dark skin in a dose of one capsule (250 mg) per day for 3 months (from June to August) to thereby examine the effect of the present invention. Then each subject evaluated the skin condition items [(1) smoothness, (2) spots and freckles and (3) whiteness] by herself. Table 1 gives the results. As Table 1 indicates, the persimmon tannin had a beautifying effect.

Table 1

Extent of improvement	Remarkable	Moderate	Slight	No
(1) Smoothness	2	3	5	15
(2) Spots, freckles	5	8	6	6
(3) Whitening	4	7	7	7

#### Example 2: Nourishing food

	vitamin B <sub>6</sub>	0.05 part
5	vitamin B <sub>2</sub>	0.01 "
	chinese nutgall tannin	0.45 "
	royal jelly	0.1 "
10	malic acid	2.0 "
	lactose	25 "
15	granulated sugar	30 "
	glucose	the balance
	<hr/>	
	in total	100

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The above components are mixed together to thereby give a nourishing food.

Example 3: Soft drink

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	malic acid	0.6 part
	tartaric acid	0.4 "
30	honey	5.0 "
	D-sorbitol (70 %)	6.0 "
	granulated sugar	7.0 "
35	sodium alginate	0.15 "
	cinnamon oil	0.003 "
40	tea-leaf tannin	2.0 "
	purified water	the balance
	<hr/>	
45	in total	100

The above components were mixed together and uniformly dissolved. After filtering, a soft drink was obtained.

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Example 4: Cosmetic lotion

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	1,3-butylene glycol	3.0 parts
5	sorbitol solution (30 %)	4.0 "
	polyoxyethylene sorbitan monolaurate (20 E.O.)	1.8 "
10	polyoxyethylene lauryl ether (20 E.O.)	0.3 "
	ethanol	15 "
15	nutgall tannin	3 "
	methyl p-hydroxybenzoate	0.1 "
	water	the balance
20	in total	100

The above components were mixed together and uniformly dissolved to thereby give a cosmetic lotion. Approximately 1 g/day of the obtained cosmetic lotion was applied to the whole face of each of 25 female subjects (aged 25 to 50) suffering from spots, freckles or dark skin for 3 months (from June to August) to thereby examine the effect of the present invention.

Then each subject evaluated the skin condition items [(1) smoothness, (2) spots and freckles and (3) whiteness] by herself. Table 2 gives the results. As Table 2 indicates, the persimmon tannin had a beautifying effect.

Table 2

35	Extent of improvement	Remarkable	Moderate	Slight	No
	(1) Smoothness	10	8	7	0
40	(2) Spots, freckles	7	9	9	0
	(3) Whitenign	12	8	5	0

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Example 5: Pack

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	talc	28	parts
	red oxide	26	"
5	olive oil	3	"
	polyoxyethylene sorbitan monolaurate (40 E.O.)	0.8	"
10	wattle tannin	10	"
	sorbitol solution (70 %)	6	"
15	methyl p-hydroxybenzoate	0.1	"
	perfume	0.1	"
	kaolin	the balance	
20	<hr/> in total		100

The above components were well mixed together to thereby give a powdery pack.

#### Example 6: Emollient cream

	squalane	7.0	parts
30	stearic acid	3.0	"
	cetanol	5.0	"
35			
	glycerol tri(caprylate/caprate)	8.0	parts
40	polyoxyethylene cetyl ether (25 E.O.)	2.5	"
	lipophilic glycerol monostearate	2.0	"

The above components were mixed together and melted at approximately 80 °C. Then 0.15 part of methyl p-hydroxybenzoate, 4.0 parts of 1,3-butylene glycol, 4.3 parts of a sorbitol solution (70 %), 1.5 parts of quebracho tannin, and water (the balance to give a total amount of 100 parts), heated to approximately 60 °C, were added thereto. The obtained mixture was uniformly stirred and then 0.1 part of a perfume was added thereto. The obtained mixture was cooled under stirring to thereby give an emollient cream.

#### Claims

1. A beautifying composition comprising an effective amount of tannin(s) and a beautifying carrier.
2. The composition as claimed in claim 1, characterised in that the beautifying carrier is a food or a drink.
3. The composition as claimed in claim 2, characterised in that the beautifying carrier is coffee, chocolate, tea, gum, candy, sweets, cookie, cereal, wine, liquor, fruit juice, carbonated beverage or jam

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4. The composition as claimed in claim 1, in which the beautifying carrier is a cosmetic.
5. The composition as claimed in claim 4, in which the beautifying carrier is a cosmetic material containing a vitamin(s).
6. A method for beautifying the skin of a human being by administering tannin with a drink or a food.
7. A method for beautifying the skin of a human being by applying tannin on the skin with a cosmetic.

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**PARTIAL EUROPEAN SEARCH REPORT**  
which under Rule 45 of the European Patent Convention  
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Application number

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
X	PATENT ABSTRACTS OF JAPAN, unexamined applications, C field, vol. 8, no. 8, December 20, 1984 THE PATENT OFFICE JAPANESE GOVERNMENT page 72 C 257 * Kokai-No. 59-148 712 (KINGO) *	1, 2, 4, 7	A 61 K 7/48 A 23 L 1/29
X	EP - A1 - 0 214 317 (SOCIETE DES PRODUITS NESTLE S.A.) * Claims 1-3, 9, 10; examples *	1, 2, 3	
X	DE - C - 449 454 (A. KUNZEL) * Page 1, lines 20-50 *	1, 4, 7	
X	GB - A - 1 184 922 (LABORATOIRES RENE RAMBAUD) * Claims 1-3; page 1, lines 14-37 *	1, 4, 7	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 5)
			A 61 K 7/00 A 23 L 1/00 A 23 L 2/00
<b>INCOMPLETE SEARCH</b>			
<p>The Search Division considers that the present European patent application does not comply with the provisions of the European Patent Convention to such an extent that it is not possible to carry out a meaningful search into the state of the art on the basis of some of the claims.</p> <p>Claims searched completely: 1-5, 7</p> <p>Claims searched incompletely: -</p> <p>Claims not searched: 6, Article 52(4), method for treatment of the human or animal body by therapy</p> <p>Reason for the limitation of the search: -</p>			
Place of search VIENNA		Date of completion of the search 19-02-1991	Examiner IRMLER
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			



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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. <sup>8</sup> 15)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	PATENT ABSTRACTS OF JAPAN, unexamined applications, C field, vol. 10, no. 310, October 22, 1986 THE PATENT OFFICE JAPANESE GOVERNMENT page 145 C 379 * Kokai-No. 61-122 209 (OSAKA) * --	1,4,7	
X	PATENT ABSTRACTS OF JAPAN, unexamined applications, C field, vol. 9, no. 241, September 27, 1985 THE PATENT OFFICE JAPANESE GOVERNMENT page 29 C 306 * Kokai-No. 60-98 962 (OSAKA) * --	1,2	TECHNICAL FIELDS SEARCHED (Int. Cl. <sup>8</sup> 15)
X	PATENT ABSTRACTS OF JAPAN, unexamined applications, C field, vol. 7, no. 118, May 21, 1983 THE PATENT OFFICE JAPANESE GOVERNMENT page 90 C 167 * Kokai-No. 58-38 209 (SUNSTAR) * --	1,4,7	
X	PATENT ABSTRACTS OF JAPAN, unexamined applications, C field, vol. 12, no. 15, January 16, 1988 THE PATENT OFFICE JAPANESE GOVERNMENT page 95 C 469 * Kokai-No. 62-171 662 (NAGANO) * --	1,2,3	
A	TASCHENBUCH DER MODERNEN PARFÜMERIE UND KOSMETIK, 1966, Wissenschaftliche Ver- lagsgesellschaft M.B.H., Stuttgart H. JANISTYN	1,4,5	